ACCON-MPI/TS-Adapter
User Manual

The Best Solutions for PLC

1 PREFACE

This manual is for project users, users and assemblers who utilize the ACCON-MPI/TS-Adapter.

It shows the user the handling of the ACCON-MPI/TS-Adapter and explains signaling functions. All necessary data for assembling should be provided to the assembler. © 1995 - 2009

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Note:

We have checked the content of this manual for conformity with the hardware and software described. Nevertheless, because deviations cannot be ruled out, we cannot accept any liability for complete conformity. The data in this manual have been checked regularly and any necessary corrections will be included in subsequent editions. We always welcome suggestions for improvement.

Last update 2008-03-18. All technical changes reserved.

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2 TECHNICAL DESCRIPTION

The ACCON-MPI/TS-Adapter enables the connection of a PC to the MPI interface of a S7 PLC via modem for the purpose of remote maintenance. The ACCON-MPI/TS-Adapter uses the same communication protocol as the TS Adapter. So the ACCON-MPI/TS-Adapter can be used with any software which supports the TS Adapter. The ACCON-MPI/TS-Adapter can be used without the modem, too. In this case the device behaves like an ordinary ACCON-MPI-Adapter respectively PC Adapter. A bushing for the connection of a further node e.g. a control panel console is located at the bus plug of the ACCON-MPI/TS-Adapter. To operate the ACCON-MPI/TS-Adapter via a modem connection with STEP 7 you need the TeleService option package from Siemens. When using the ACCON-MPI/TS-Adapter in direct mode this option package is not necessary.

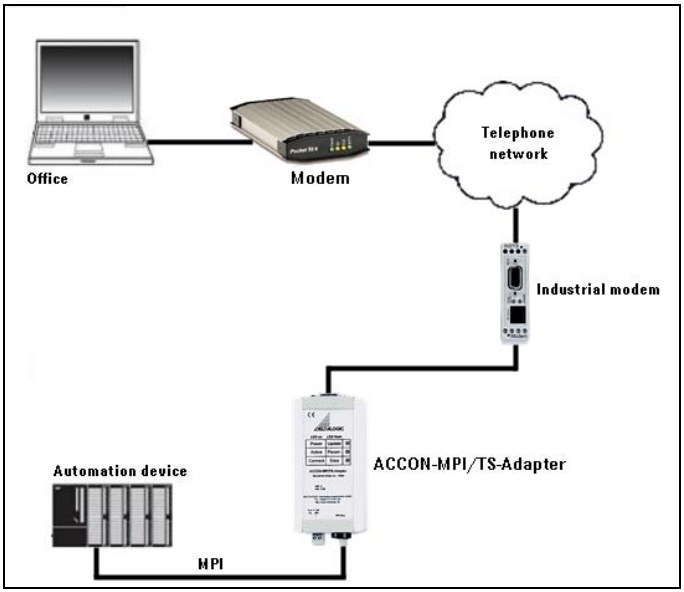


Figure 1: Build-up

The functions »PG_DIAL« and »AS_DIAL« are not implemented.

The ACCON-MPI/TS-Adapter cannot be used with S7-200 PLCs!

FM35x-modules cannot be parametrized with the ACCON-MPI/TS-Adapter!

Features:

- Can be used with Hayes compatible modems
- Password protection
- Call-back function
- Can be directly used as programming adapter
- Serial transmission rate of up to 115,2 KBit/s
- MPI speed up to 187,5 KBit/s
- Voltage feed from the CPU
- External 24-V feed possible
- Bus plug with PG bushing

3 SCOPE OF DELIVERY

- ACCON-MPI/TS-Adapter
- Null modem cable (ca. 2 m)
- User manual

Suitable accessories can be found on www.deltalogic.de.

4 DEVICE DESCRIPTION

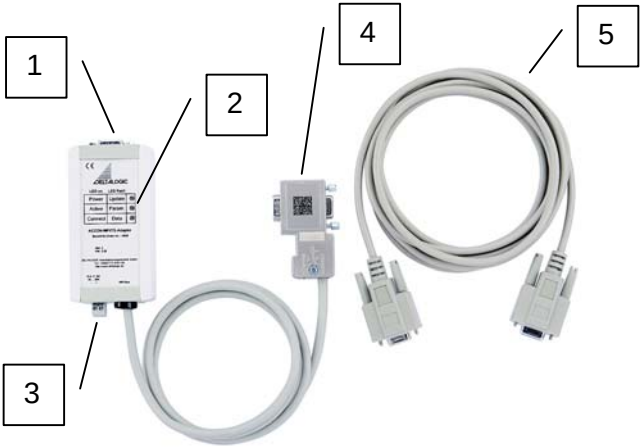


Figure 2: ACCON-MPI/TS-Adapter

1) RS232 interface for the communication with the PC
2) Status LEDs
3) Voltage bushing for 24 VDC. Please keep the polarity in mind.
4) Bus plug with PG bushing, connectable terminator and a 1,2 m connection line.
5) PC connection cable

LED Display

The three LEDs on the front side of the device inform about the operating state of the ACCON-MPI/TS-Adapter. So sources of error can be detected very quickly.

The LEDs can be in one of three states: ON, OFF, BLINKING

Status LED	Power/Update LED	Active/Param. LED	Connect/Data LED
Adapter has no voltage feed.	OFF		
Adapter has a 24 VDC voltage feed and is working	ON		
Firmware update being executed	BLINKING	ON	
Adapter is logged in on the MPI bus	ON	ON	
Adapter is receiving parametrization	ON	BLINKING	
Adapter is connected to the PLC	ON	ON	ON
Adapter is transmitting data	ON	ON	BLINKING

Tabelle 1: Status LEDs

5 REQUIREMENTS FOR OPERATING

Hardware requirements

If possible plug the ACCON-MPI/TS-Adapter directly on the MPI interface of a SIMATIC S7-300 or S7-400 PLC. If not possible so please connect the ACCON-MPI/TS-Adapter to an external voltage feed.

Please remember that the ACCON-MPI/TS-Adapter cannot be used with PROFIBUS!

Software requirements

To use it as programming adapter you need a PC including SIMATIC STEP 7 from version 5.1. When accessing a modem connection you need the TeleService option package from Siemens.

Minimum clearance

The following minimum clearance has to be kept that

- you can assemble and disassemble the ACCON-MPI/TS-Adapter without disassembling other parts of the facility.
- there is sufficient space to connect all interfaces and connections to standard accessories.
- there is enough room for cable routings.

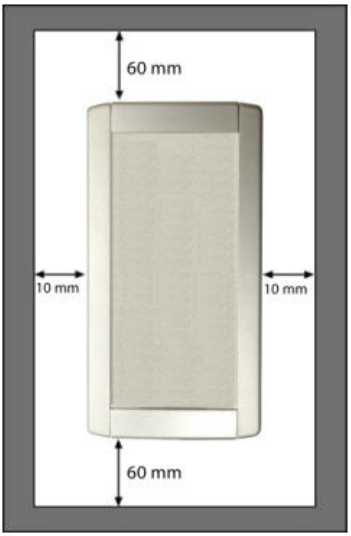


Figure 3: Minimum clearance

Module assembly

To assemble the device a top hat rail holder is necessary. Available as accessory.

6 COMMISSIONING

Connection to the modem

Put the RS232 connection cable on the modem's RS232 port.

Connection to the automation system

Connect the 9-pin SUB-D plug to the MPI interface of your S7 PLC.

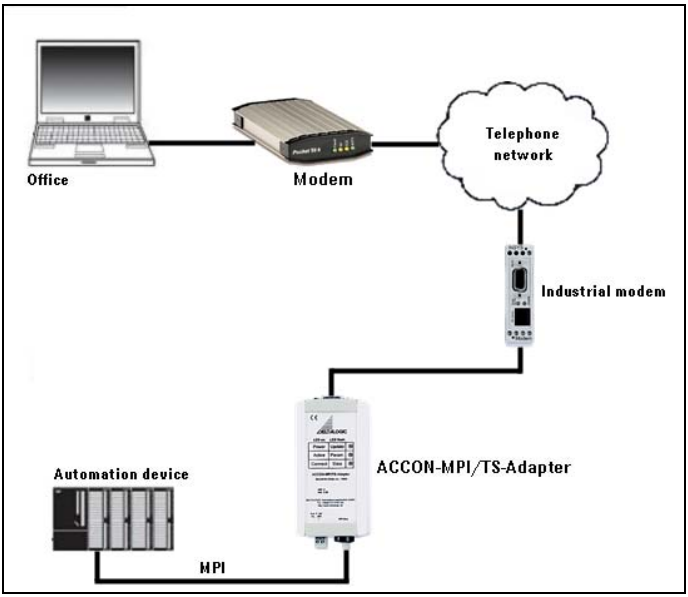


Figure 4: Build-up

Installation of the local modem

If you already have installed an analog modem under Windows, it is mostly possible to use it for remote maintenance. In this case you can skip the next step and use the already installed modem. After connecting to the PC, plug&play modems will be detected automatically and integrated into the system. But the driver, supplied with the modem, is necessary. No plug&play modems can be installed manually via **Control Panel > Phone and Modem Options** then in the tab »Modems«. The driver supplied with the modem is needed here, too. Alternatively, you can use a Windows standard driver (e.g. Standard 28800 bps Modem). The installed modem can be selected in the programming software when establishing a connection.

Example: Adjusting the local modem

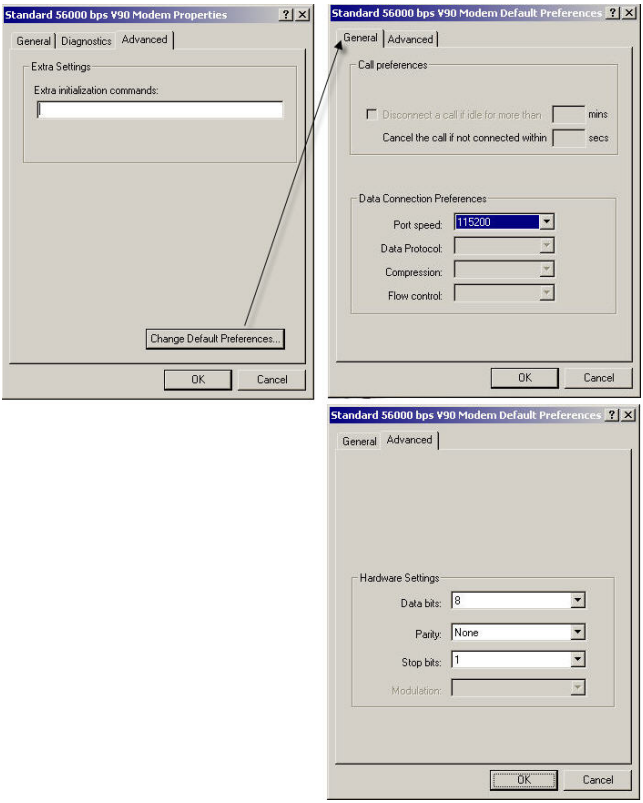


Figure 5: Adjusting local modem

Installation of the ACCON-MPI/TS-Adapter at the facility

Assemble the ACCON-MPI/TS-Adapter in the cabinet keeping the indicated minimum clearance.

If necessary, feed 24 VDC via the voltage bushing. Please keep the polarity in mind. Connect the ACCON-MPI/TS-Adapter to the RS232 interface of your PC or PG via the supplied null modem cable.

Parametrization with TeleService

The software which is used for the communication with the automation device adjusts the settings of the ACCON-MPI/TS-Adapter.

In addition to the programming software STEP 7 you need the TeleService software from Siemens (Version 3.0 or higher) to administrate connections (telephone book of the selectable plants) and establish the dial connection to the PLC.

Adjust the connection in the dialog **Set PG/PC Interface** as follows:

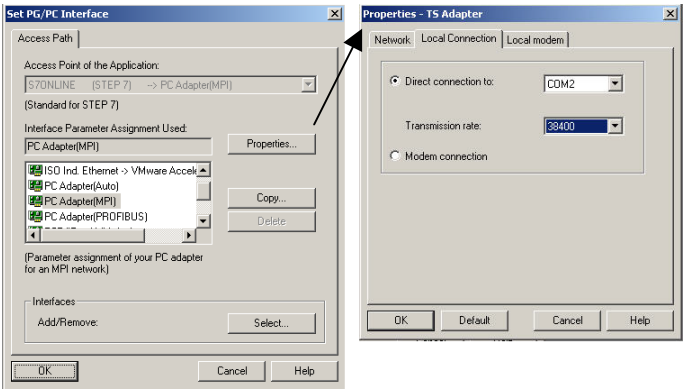


Figure 6: Set PG/PC Interface

Choose the COM-Port to which the ACCON-MPI/TS-Adapter is connected to your PC:

Via **Options > Assign Parameters TS Adapter I/II...** in the TeleService software the following preferences for the ACCON-MPI/TS-Adapter can be set.

Transmission rate from ACCON-MPI/TS-Adapter to modem:

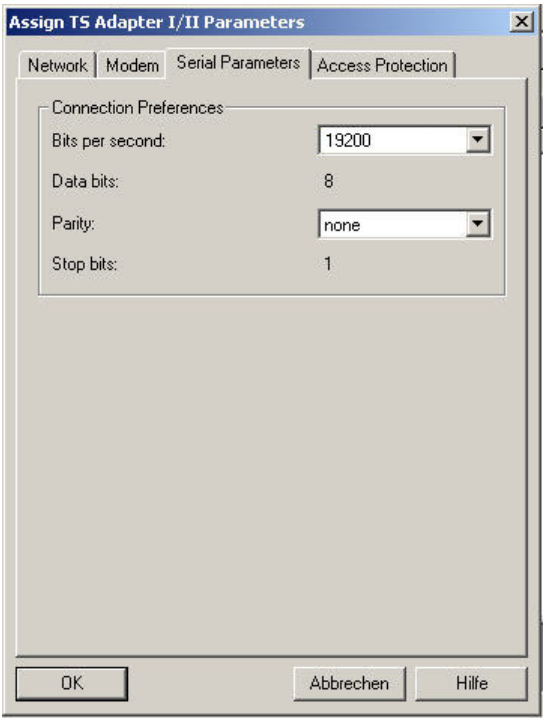


Figure 7: Serial Parameters

Modem settings / Initialization string

Go to the tab »Modem«.

Enter the commands needed by your modem into the field »Initialization«. For more information please look into your modem manual.

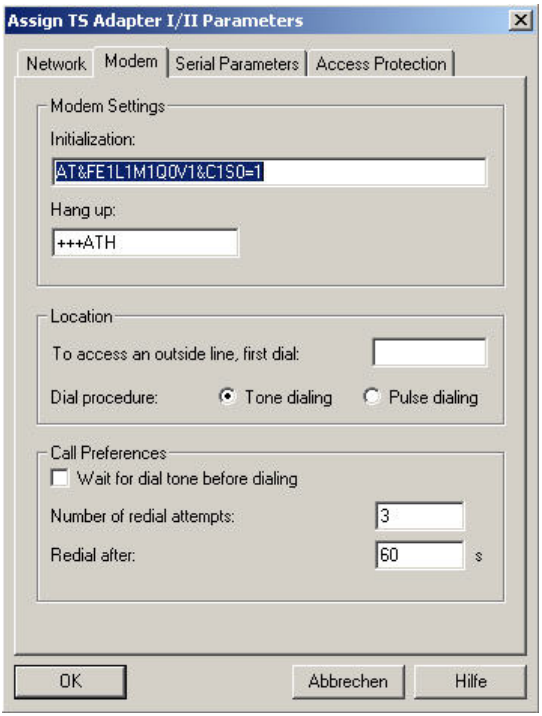


Figure 8:Setting the initialization string

The complete initialization string could be like the following:

AT&FE1L1M1Q0V1&C1S0=1

AT	Initiate modem commands
&F	Load modem factory defaults
E1	Echo of commands ON
L1	Sound volume level 1

M1	Speaker ON
Q0	Modem response ON
V1	Response in plain text
&C1	DCD signal shows available carrier
S0=1	Automatic call acceptance. The number 1 stands for rings until call acceptance e.g. S0=3 the modem accepts the call after 3 rings.

Access protection and call-back

Go to the tab »Access Protection«.

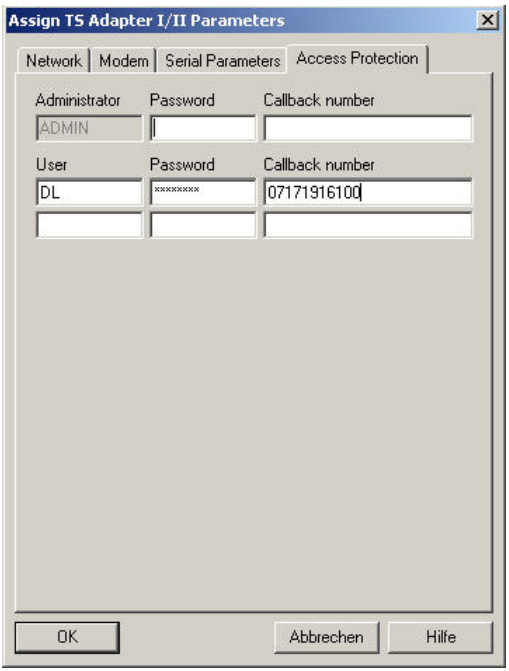


Figure 9: Access Protection

Here you can store three different users including call-back number and password. The user »ADMIN« is the only one who is allowed to change all the adapter's settings and all user settings. The other two users can only change their own password and call-back numbers. If a call-back

number is set, the ACCON-MPI/TS-Adapter always utilizes this number to call back, when the respective user logs in.

If you enter a wrong call-back number for the user »ADMIN« the ACCON-MPI/TS-Adapter cannot be parametrized via a remote connection any more. In this case you can only change the call-back number directly at the device (microswitch position »Ext.«)!

Save the settings with »OK« on the adapter and answer the eventually appearing warning:

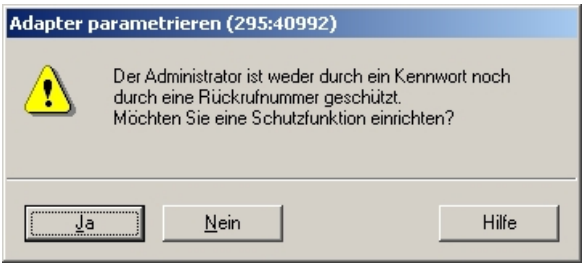


Figure 10: Parametrizing adapter, set protection

The warning dialog means the following:

»The administrator is neither protected by a password nor by a call-back number. Do you want to set a protection function?«

By clicking on »No« all settings will be stored in the adapter despite the warning. By clicking on »Yes« you get back to the settings.

Now the ACCON-MPI/TS-Adapter is parametrized. Connect the modem (cable usually supplied with the modem) to the RS232 port of the ACCON-MPI/TS-Adapter and wait until the Active LED lights. If not the settings of the ACCON-MPI/TS-Adapter are incorrect (normally wrong bus settings or init string) and the remote maintenance is not possible.

The parametrization can be done locally via the TeleService software as well as via a telephone connection.

The ACCON-MPI/TS-Adapter is ready to establish a remote connection when the Power LED as well as the Active LED is on.

7 PARAMETRIZATION WITH ACCONFIGURATOR

Using ACCONfigurator it is possible to parametrize or update the ACCON-MPI/TS-Adapter at any PC without additional software e.g. TeleService. The program is located on the DELTALOGIC Automatisierungstechnik-CD.

Go to **Adapter/Product >...select** and choose ACCON-MPI/TS-Adapter. Connect the ACCON-MPI/TS-Adapter to your PC using the supplied null modem cable.

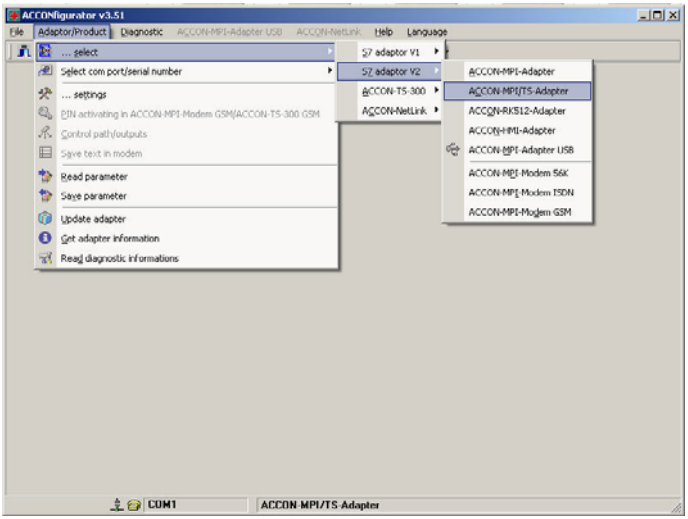


Figure 11: Select ACCON-MPI/TS-Adapter

Set the COM-Port to which the ACCON-MPI/TS-Adapter is connected under **Adapter/Product > Select com port/serial number**.

Read out actual settings from the ACCON-MPI/TS-Adapter and enter changes via **Adapter/Product > Read parameter**. To store the new settings in the device click on »Save/End«.

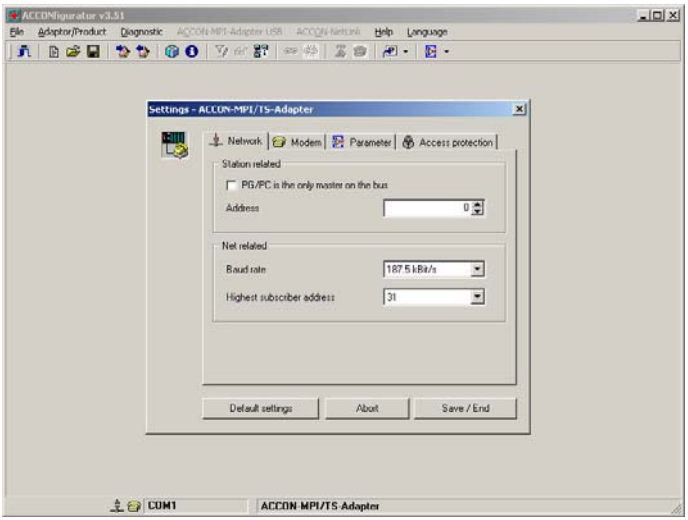


Figure 12: Settings TS Adapter, network

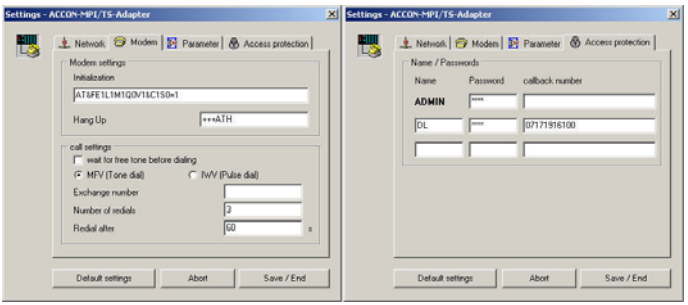


Figure 13: Settings TS Adapter, modem and access protection

When using ACCONfigurator it is not possible to parametrize the ACCON-MPI/TS-Adapter via a remote connection.

8 TECHNICAL DATA

Connection to modem	RS232 with 9-pin SUB-D bushing, the connection has to be via the cable supplied with the modem, max. 115,2 KBit/s
Connection to PC	RS232 with 9-pin SUB-D bushing, via supplied null modem cable (ca. 2 m), max. 115,2 KBit/s
Connection to PLC	9-pin SUB-D plug with PG bushing, cable mounted stationary (ca. 1,2 m), max. 187,5 KBit/s
Supported PLCs	S7-300, S7-400
Weight in kg	Ca. 0,18
Dimensions (W x H x D) in mm	54 x 105 x 30
Protection type	IP 20
Voltage supply	24 VDC ± 25 %
External voltage supply possible	Yes
Power consumption	Type. 30 mA, max. 45 mA
Galvanically separated	Yes
Operating temperature	0 °C to 60 °C
Storage and transport temperature	-20 °C to 60 °C
Relative humidity	Operating 5 % to 85 % at 30 °C, Storage 5 % to 93 % at 40 °C
Electromagnetic compatibility (EMC) Transient emissions interference resistance on signaling lines interference resistance ESD	 Class B according to EN55022 ±2kV according to EN61000-4-4 ±6kV contact discharge method EN61000-4-2 ±8kV air discharge method

HF-radiance fields Grid-pound HF interferences	EN61000-4-2 10V/m according to EN61000-4-3 10V according to EN61000-4-6
Specials Produced: Maintenance:	 according to ISO 9002 maintenance free (no battery)

Table 2: Technical data

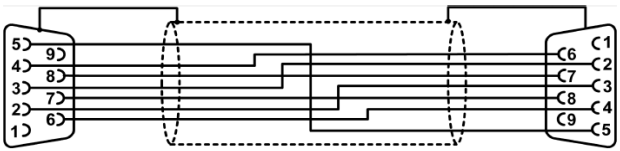
Pin assignment

Pin	Sub-D plug PC	Sub-D plug MPI
1	DCD	n.c.
2	RXD	M24 VDC
3	TXD	LTG_B
4	DTR	RTS AS
5	GND	M5 VDC
6	DSR	P5 VDC
7	RTS	P24 VDC
8	CTS	LTG_A
9	RI	RTS PG

Table 3: Pin assignment

Connection cable

PC to ACCON-MPI/TS-Adapter (supplied with adapter)



Accessories for S7-Adapters

13012-HS Top hat rail holder short
To assemble the ACCON-MPI-Adapters on a DIN top hat rail

13012-24VDC External voltage supply 24 VDC for S7-Adapter
For voltage supply of the ACCON-MPI-Adapter if there are no 24 VDC.